

Virginia  
Wildlife

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# Virginia Wildlife

**Dedicated to the Conservation of  
Virginia's Wildlife and Related Natural Resources  
and to the Betterment of  
Outdoor Recreation in Virginia**

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## Be Gentle With The World

By SANDRA S. MEADOWS  
*Newport News*

**C**ONSERVATION is defined as the care and protection of natural resources. Our ecologically wounded world deserves the renewed and best efforts of all its people in saving the environment.

The bulk of responsibility for providing a continuing and sound future for our sporting environment rests with sportsmen. We must be avid conservationists. Our most important contribution to this cause is the education of our children. They *are* the future and must be taught early how to care for their inheritance.

Experience is probably the best teacher. What our sport is makes no difference; how we practice it is what matters. Young people are great imitators and quick learners. When we show, by our actions, that we love nature, and respect it, our children will soon learn what conservation is about.

It is easy for us to teach that water is for fishing or boating, for swimming, or for just watching. But we must also teach that it is *never* for polluting.

It is a joy for us to show a youngster that woods have special sights and smells and sounds, that hunting is a good sport, that camping and backpacking are fun. But we must also show that a drink can or a cigarette pack dropped in a piney glade strikes a discordant note.

It is fun to search in an autumn forest for muscadine grapes, or for deer sign. But what a tragedy to allow a careless flame to destroy a place of beauty and solitude. We must teach our children to be gentle with the world.

When our youth see us throw back an undersized fish, pass up a big mallard because we already have our limit, pick up the trash that some traveler has left as his thoughtless signature, it is good. By doing these things we are not only taking care of our natural resources today, we are also securing our environment for the future.

This generation has made rather a mess of the ecological situation. I would like to think that our children will clean up the horrors we have perpetrated, and keep them cleaned up.

The future of our environment, sporting and otherwise, depends on our youth. For them to become responsible conservationists, however, our own habits must be flawless.

To have a future we must teach our children.

### Experiences With Purple Martins

OUR home place, within hollering distance of Blue Run Creek, attracted rabbits, gray squirrels, and many birds including swallows who shared the old barn with cows and horses. But the martin apartment (built by my cousin with care and pride) was used for years by sparrows and starlings. Purple martin scouts just passed it by, though it was probably the only "apartment" within miles.

Last year when sister and I moved to a new duplex a short distance from our old home place, we brought along the martin apartment, setting it in cement at the top of the terrace adjacent to our small vegetable garden. To our delight, purple martins used it.

When it was time to remove English pea vines and plant a late crop of corn, I started the garden tiller and worked the soil for planting with one eye on the martins, the other on my garden. The martins accepted the noise like real trouper; nothing seemed to bother them. Not even some youngsters swinging like monkeys on the apartment pole till a yell from me stopped the action. I guess the birds thought it was just a big wind passing by.

Mr. and Mrs. Martin raised two families last summer, and ate lots of insects that would have raided my vegetable garden. When they left, I cleaned their apartment in anticipation of the next time martins would swoop in with wings like a glider and the control of a helicopter.

Doris A. Colvin  
Somerset



MY home, built in 1844, is in Northumberland County on Glebe Creek, which runs into the Coan River. I bought one of those 12-apartment houses for purple martins, to go with my other two. At times last summer I counted 25 or 30 martins at one time; they'd use the TV aerial and a nearby tree for overflow. Around the 15th of August they usually have their "convention"; what fun they have. Soon afterwards when all is quiet and the mosquitoes have come, how I wish for my friends, the purple martins, then on their way to South America.

Mrs. Homer L. Downing  
Lottsburg

# PLACING AMERICAN WILDLIFE MANAGEMENT IN PERSPECTIVE



WRITERS and photographers have known for a long time that the plight of a wild animal struggling for survival makes a good story. Today, TV and illustrated magazines bring the problems of endangered species—sometimes with calculated shock effect—into the American home. Much of this publicity has been constructive. It has aroused needed public support for efforts to save animals threatened with extinction at home and around the globe. Congress, as a result, has approved progressively stronger programs to aid wildlife species in difficulty. And the United States has taken leadership in developing a world treaty that commits all nations signing it to protect threatened and endangered animal populations.

As with all emotion-tinged issues, however, there is a tendency to overstate the case. Some journalists distort the status of American wildlife in general, the steps needed to maintain wild populations, and the actions required to reverse declines of species that really are threatened. Because of such misinformation many interested persons get the impression that *all* American wildlife is endangered. This view is unsupported by facts.

That man and his works have destroyed a number of species and greatly reduced others that were abundant in early times is well-known. Less well-known is the fact that many species, some of which were rare in colonial times, are thriving today largely because of compatible human influences on the environment, well designed private management efforts, and sound state and federal wildlife management programs.

All wildlife is affected in one way or another by man. But man can build as well as destroy. Of all of the creatures on earth, he is the only one with the ability

to tailor the abundance of most species to fit his desires. With some birds and mammals this can be done with minimum effort because human changes in the environment favor their increase or their needs are not as critical. With others deliberate and often expensive programs must be developed to maintain specific habitats. Actions needed to save one species may be entirely different from those needed to save a second. But all wild animals require adequate habitat to sustain their populations and breeding stock from one year to the next.

Food, water, and cover used to escape enemies and adverse weather are the essential parts of the habitat of every species. But the specific habitat needs of each species vary in some degree from those of every other kind of animal, although many different animals may occupy the same general area.

Water requirements of a desert jackrabbit obviously differ greatly from those of a beaver. What might be year-round food and cover for a meadow mouse would be little more than a full day's meal and no cover at all for an elk. Many migratory birds occupy and need widely different types of seasonal habitats separated by hundreds and often many thousands of miles. Some large mammals, like caribou and cougars, range over wide areas to find their year-round needs. Small animals, like shrews and moles, may live out their lives in one small corner of a field or woodlot.

Some species need a highly specialized type of habitat. Most woodpeckers require dead and dying trees to supply their insect foods and nesting sites. But the Gila woodpecker of the desert Southwest digs its nesting holes exclusively in the larger cacti. Some species, like the California condor, can stand almost no human disturbance. Others, like the common pigeon and English or house sparrow, thrive in the most populous cities, nesting on buildings and garnering meals from human

Excerpted from the Wildlife Management Institute's bulletin *Placing American Wildlife Management in Perspective*. Copies of the bulletin may be obtained free from the Commission of Game and Inland Fisheries.

handouts and leftovers. When habitat needs of every species and subspecies are computed in detail, the range in variety is almost infinite.

Whenever local conditions change, the species composition of local wildlife populations also changes. Some species may be eliminated, others decline, still others increase. If changes remove any of its essential habitat requirements, a species cannot continue to live in the area affected. If habitat of the kind it needs is reduced to remnants, the species will become endangered. If it is eliminated everywhere, the animals will become extinct. In the absence of adequate habitat, protection of individual animals is meaningless in terms of perpetuating wild populations.

Wildlife now threatened and endangered can be maintained only by protecting those populations that still exist and preserving what remains of their vital habitats. But their numbers can be increased by expanding and improving suitable habitats. This does not mean that threatened and endangered wildlife can be saved only by denying or limiting human use of the land. Rather, it means that such use be done with thoughtful planning and full consideration for wildlife's needs. Incorporation of such considerations in all programs affecting the landscape would assure a future for America's varied wildlife.

Potential for increase in wildlife populations in ideal habitat almost defies belief. In 1900, there were virtually no wild deer left in Pennsylvania. The state's original deer herd had been destroyed early in the 19th century by landclearing for agriculture, overgrazing, by destructive timber cutting followed by wild fire, and by unregulated shooting. After the Civil War, with increased industrialization and the opening of the West, thousands of farmers abandoned their marginal lands to move to towns, gold fields, or fertile soils beyond the Mississippi. Behind them, the forests, under protection from wild fire, gradually began to reoccupy abandoned fields and homesites, creating the early-growth forests favored by deer.

Around the turn of the century, sportsmen's organizations and the Pennsylvania Game Commission purchased a relatively few deer from other states and from private dealers; had laws passed to protect them; and released them into habitat that changing land use had made ideal for deer. Twenty-five years later, Penn's Woods held nearly a million whitetails, almost twice as many as the available range could support through winter.

Potentially, a deer population can more than double every second year. One doe can produce 15 or more fawns in an average life span of eight years. If all her young and theirs survive to the same age and breed as successfully, they would number 150 or more before her death. Many animals—songbirds, rabbits, squirrels, quail and ducks, for example—can increase at even greater rates.

Obviously, when a population of a particular species begins to multiply, something has to give—and it does. Each piece of land has a limit on the number of animals of any one species that it can support. Wildlife biologists call this carrying capacity. It is the capability of an area to provide a species' food, water, shelter, and other needs in a given season. Once carrying capacity is reached, the surplus animals must move elsewhere or die. If suitable under-stocked habitat is not available within their range of mobility, surplus animals are doomed.

The tendency of populations of nearly all wild species is to expand rapidly to the carrying capacity of the available habitat. In some species, like pheasants and rabbits, which often produce ten or more young in a single breeding season, this level can be attained very quickly, even by a reduced breeding population. In other species, such as bears, which rarely breed until they are several years of age and then produce fewer young, the rate of increase is slower. But nature compensates by endowing the slower reproducers with longer lives.

For many species, particularly the smaller animals, nature's scheme is to produce an overabundance of young. This increases the likelihood that some will survive to perpetuate the species in spite of the inevitable toll taken by adverse weather, disease, starvation, predators, and other hazards. Most wild animals in North America produce all of their young during a restricted season of a few weeks, usually in the spring or early summer. In northern or temperate area, summer carrying capacity is far higher than that of winter because of the abundance of plant and other life. A relatively small patch of cover may contain a population of a dozen or more cottontail rabbits in early September, but few are likely to survive until March. No more than 35 percent of the young mourning doves produced in summer live until the next breeding season. The higher the reproductive rate of a species, the higher its natural mortality rate. In the wild, animals that produce many young have short lives and lose most of their young in their first year.

Nature has many methods for regulating wild popula-



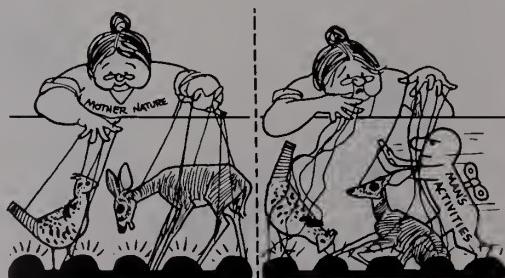
tions. One of these is *territorialism*—the tendency of breeding animals to defend a given area. Some sea birds nest almost shoulder to shoulder in dense colonies, but they will not tolerate the presence of other birds within reach of their nests. The lilting song of a male house wren is not a song of joy, but a warning to all other wrens to keep away from his nesting territory. If an intruder ventures too near, the defending male will attack with righteous fury. A cock pheasant may gather a harem of six or more mates and defend a crowing area approaching an acre or more. A male grizzly bear, in breeding season, may defend 20 or more square miles from all other males of his kind.

Such natural population controls are nature's way of assuring that only the stronger, quicker, and more alert animals survive to perpetuate the species.

At times, a series of mild winters and unusually favorable conditions over several breeding seasons may temporarily raise the normal carrying capacity and the populations of animals that depend on plants. When weather conditions return to average, crowding leads to stress and competition for food, space, and mates and permits the spread of diseases. Winter food supplies become inadequate and malnutrition, diseases, and predators take heavy tolls. In turn, populations of wolves and other predators that feed on the plant eaters are regulated by the abundance or scarcity of the animals on which they feed.

Overpopulations can be especially disastrous to large browsing and grazing mammals, like deer and elk. Where overabundant, such animals can cause great damage to their own habitats, resulting in a much reduced carrying capacity for many years. That is what happened to the Pennsylvania deer herd in the late 1920's. Hundreds of thousands of deer died of starvation and disease in a series of bitter winters before the numbers could be lowered by regulated hunting to the carrying capacity of the winter range.

Even in some wildlife refuges and national parks, elk and deer herds must be thinned to prevent overabundant animals from destroying their food supplies and damaging the food supplies of other species. The lesson here is that man and his activities have so interrupted wildlife's natural cycles and systems in most places that only through deliberate management can mankind assure the survival of most species of wildlife.



Man and his activities have interrupted wildlife's natural cycles and systems.

## Give Them

# AN IN

By BILL ALLEN  
Fairfax

FROM early summer to late fall, Virginia fly fishermen can use a reasonable facsimile of the common "inchworm" with admirable success in small waters considered by many to be unworthy of fishing: Conway River, Pocosin Hollow, Rose River, Cedar Run, Hughes River, Hannah Run, and others. Because of overhanging vegetation and because brook trout—as well as the occasional brown—are spookier than a well hunted fox, one needs a good dependable, durable dry fly: the inchworm is just that.

Many insects are called "inchworms" by the layman. For fly fishermen in Virginia, "inchworms" are mostly larval forms of various genera of the insect family Geometridae (a moth), order Lepidoptera (moths and butterflies). The term "Geometridae" is apt, for their uncommon way of walking—they are actually minus a few pairs of legs found on most other moth larvae—has earned them the familiar names of "inchworm," "looper," or "measuring worm." Other moth families have larval forms which can be confused with members of family Geometridae, specifically a few genera of Noctuidae, known also as "semi-loopers" or "half loopers." Generally, "inchworms" are colored anywhere from yellowish-green to olive but take on other hues as well; for example, in the Shenandoah, a pinkish-grey. They subsist on trees common to the area such as oak, hickory, maple, ash, wild cherry, and wild apple; and during summer and fall can be found in great numbers representing several species. Often, stream-side autopsies of brook trout stomachs reveal that this voracious fish has been literally gorging on the creatures, and in most cases a trout will have eaten at least a sample or two. Such revelations mark the time to try your hand with the inchworm dry fly.

For the angler with no desire to tie flies, the best commercial inchworm is made by the Orvis Company, Manchester, Vermont 05254. Tied on hook size 14, these flies can be purchased from sporting goods stores such as the Herman Atlas chain in northern Virginia, or they may be ordered from Orvis. I couldn't afford the eighty-cents-each expense, so as a novice fly tier, decided to copy the Orvis fly, modifying it to match the Shenandoah's inchworms.

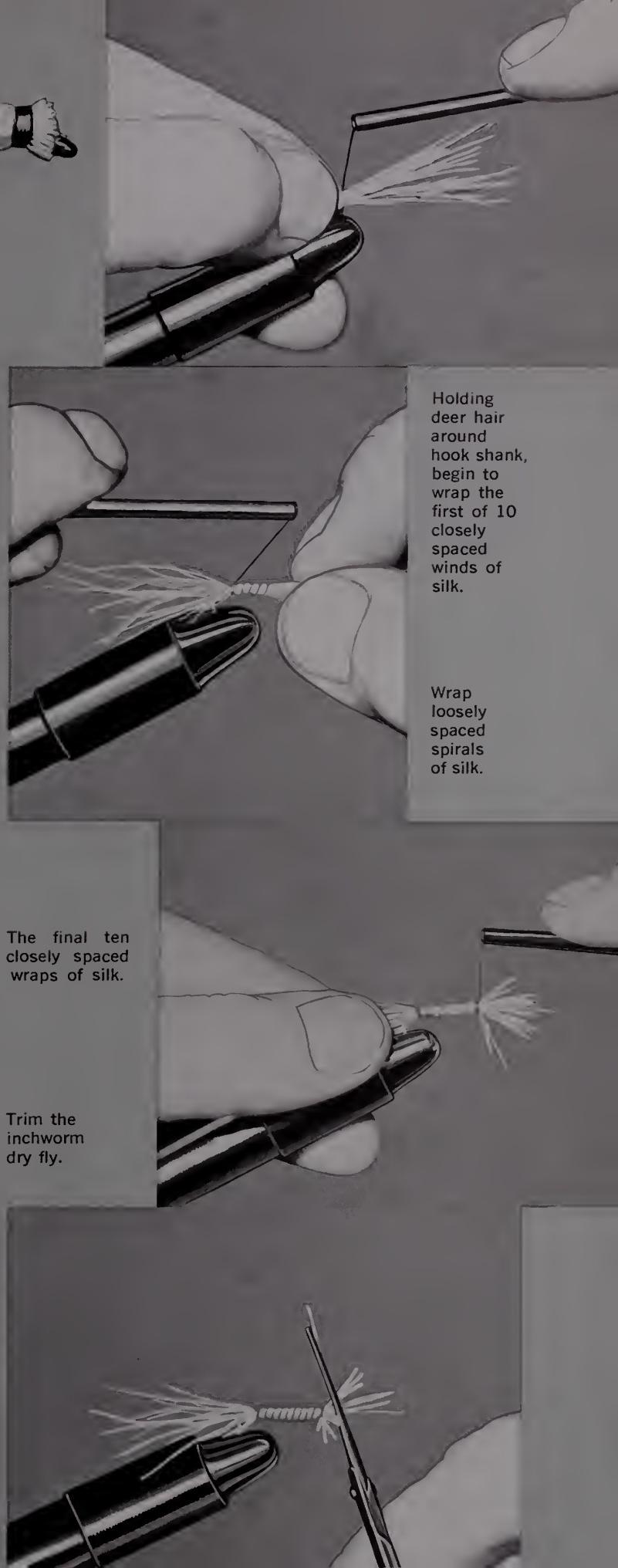
# CH



Equipment and supply needs are minimal. For equipment you need a tying vise (\$2.87-\$15.67 from Herter's, or make one from a pair of "vise grips" clamped in a vise), embroidery scissors, "X-acto" knife or razor blade, dubbing needle (make one from a cork and sewing needle), and hackle pliers or thread bobbin. Supplies needed are fly-tying wax, green-dyed deer hair, olive tying silk (4/0 or 6/0), head cement, and hooks (Mustad-Viking number 79580, size 14, chosen because they are easy to get and work well even though classified as streamer fly hooks). Natural deer hair and grey silk will be needed if you wish to imitate the pinkish-grey inchworm mentioned earlier. I recommend a basic fly tying book, if needed, to explain fundamental techniques such as finishing knots, thread waxing, etc. Don't shy away from tying the fly yourself because it's complicated; it isn't. You'll be able to tie professional looking and acting inchworms in short order.

Be sure to hone the hook with a fine stone (even new hooks are dull) before clamping it in vise. Using well waxed silk, wrap shank with a layer of thread, beginning about  $\frac{1}{8}$  inch back from eye and ending just before the shank begins to bend. Take about 30 strands of deer hair between thumb and forefinger and arrange them uniformly around shank with root-ends pointing forward. Wind about ten closely spaced wraps around hair, then a series of loosely spread spirals, and finally, beginning  $\frac{3}{16}$  inch behind the eye, another set of ten closely spaced wraps. Use half hitches or a whip finish to secure thread. Trim ends, and coat completely trimmed fly with head cement. Reason for putting root-ends of hair toward eye is because they are more buoyant. Sometimes part of a real inchworm will "dangle" partly below surface of water. This also happens with the fly. The eye-end floats; the hook-end lies below surface—an effective imitation. If you want to try the grey variety, select deer hair that has a natural pinkish cast: first trout I ever caught on a self-tied fly succumbed to this hue.

To fish small Shenandoah streams and still retain flexibility for larger waters, use a 7 or  $7\frac{1}{2}$  foot fly rod, matching DT-4-F or DT-5-F line with at least 10 feet of leader and tip tapered to 5X diameter, and single



Holding deer hair around hook shank, begin to wrap the first of 10 closely spaced winds of silk.

Wrap loosely spaced spirals of silk.

The final ten closely spaced wraps of silk.

Trim the inchworm dry fly.



Upper  
Hughes  
River.

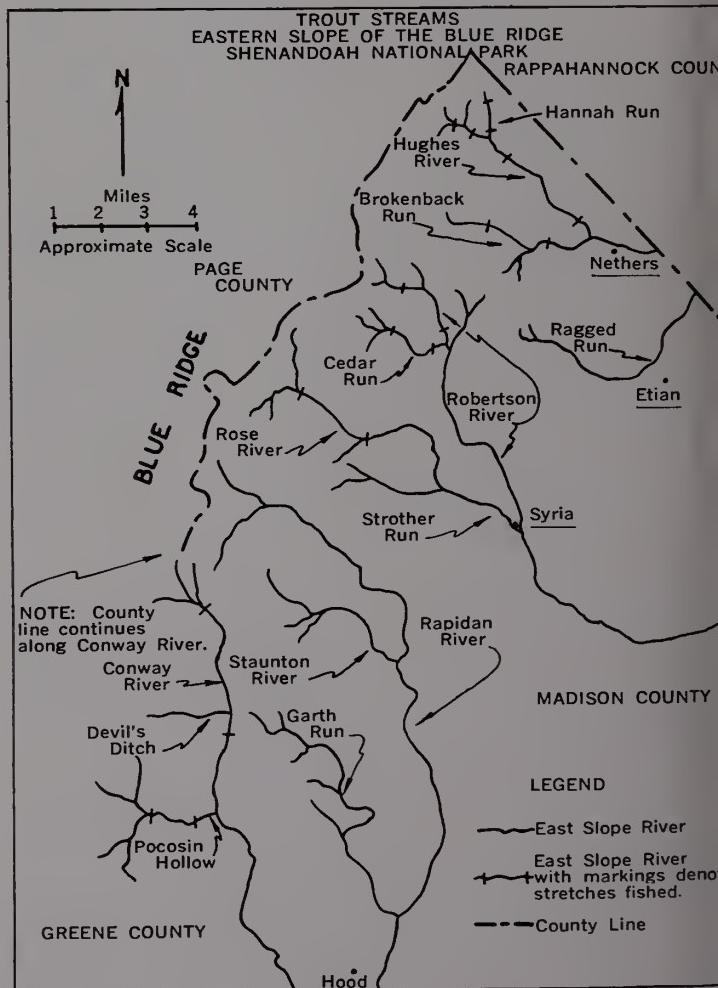
action reel. Almost any balanced rig will do well. If you already own a fly rod (and balanced line) up to a length of  $8\frac{1}{2}$  feet, use it. If you are new to fly fishing, seeking a cure for August fishing doldrums, Joe Brooks' book *Trout Fishing* will provide sound guidance and answer most questions.

Secure a Potomac Appalachian Club Shenandoah National Park Map, Central Section, Map Number 10, available at Park Headquarters or by writing the Shenandoah Natural History Association, Box 389, Luray, Virginia 22835. On eastern slopes of the Blue Ridge you will find the streams mentioned and others fished by the author. Exact fishing locations are indicated on the sketch map; by far the best (in 1973) were marked sections of Cedar Run, Pocosin Hollow, and the upper Rose River. Don't hesitate to walk a ways upstream to avoid excessive fishing pressure.

What about techniques for this kind of water in general and the inchworm in particular? Because Shenandoah streams are small, the spot to be fished must be approached with stealth, preferably from along the bank and downstream: a heavy footfall or kicked rock is enough to instantly spook these wary trout. On sunny days don't allow moving shadows (rods, arms) to fall across the gin-clear waters. Wear dark clothing to blend in with the background. Leaders should be supple and free of wind-knots and tangles, because the slightest shadow or a poorly presented fly can "put down" every fish in a pool for a half hour or so. Watch your hook on the backcast. Rocks and boulders in these freestone streams will break the point off a swiftly passing hook with unheard-of finesse. Keep your inchworm well treated with floatant. Try to cast into slightly rippling water at the head of a pool, lure dancing downstream (without line drag). Make first cast to allow

drift along the near bank, then to middle, then to far side: depending on pool size. This may take three to ten casts. Look for vegetation laden with inchworms; fish underlying and downstream stretches well. When at feeding stations brookies may not face upstream but will face sideways, waiting for something to fall from a high bank or boulder. Treat such spots with special care by placing yourself on the bank across or slightly downstream from them. Work the near side of the stream, then cast your fly so that it hits the far bank/boulder and slides (depending on slope) or drops into the pool. If there is a trout anywhere around, he won't be able to resist it. Use Light Cahills also, alternating use with the inchworm: the pair makes a formidable combination from August to October.

Many of my fishing days, especially in better waters, were characterized by numerous trout caught and released. At noon I usually cooked two keepers, lightly salted and skewered on a maple twig, over a small fire. Great lunch. During the afternoon I'd keep three for frying back at camp. Who could ask for more than outdoor surroundings, solitude, forest smells, stars, being lulled to sleep with wilderness sounds? Try it. It's a sure cure for summer's heat and city's strife, even if you don't catch fish. But don't worry. You will!





By NANCY ROBERTS  
*Stafford*

ONE of the first questions an operator is asked by visitors to the fire tower is "Don't you get bored up here all day?" The answer is "No, some overcast days are dull, but from a lofty perch watching spring arrive in Virginia, how could one possibly be bored?" Tired old Blue Ridge Mountains peer down like stern judges. At other times they are hidden in hazy cloaks as though trying to remain undisturbed by a restless humanity. When the towers open in March, one looks down upon a mottled grey landscape distorted by patches of forest green where Virginia pines huddle together. Buzzards, crows, hawks and flights of starlings are the only bird life seen. There are days when buzzards glide so close one sees a bright beady eye. After a few warm days in early March, a touch of red enters the scene as the buds of the maple swell. Occasionally a solitary Mourning Cloak is seen hovering near treetop height. These early butterflies are rare; indeed it is a privilege to see one so close. From the marshy places below, frogs in shrill chorus tell that the earth is warming and they are happy to greet the new season.

Like a lion or like a lamb, March gives way to April. The once dreary landscape is mixed with varied greens, shades that challenge any artist. New shiny deep green grasses are sharp in contrast to newly plowed red-brown fields. Winter grain offers yet another shade of green. Maples, now brilliant red, stand out among their more tightly budded neighbors. The sky seems a brighter blue; the clouds, fleecy white.

About mid-April, migrating songbirds arrive. Bird song fills the air with shrills and trills. Seemingly, each tiny feathered creature, be it warbler or finch, tries to outdo its neighbor in song. The cardinal's whistle accents the whole choir. If one is lucky enough to catch sight of the songsters as they flit among the treetops, the smallest appears to sing the loudest. Now tree leafing is really under way. Tops of poplar trees remind one of lime popsicles, frosty and cool. Cottonwood catkins seem like happy worms wriggling with the wind. Violets and bluets, along with smiling dandelions, nestle at wood's edge. During April's last weeks, golden flashes indicate tiger swallowtail butterflies gaily playing tag among pine tops. The dogwood, not yet in full flower, reminds one of a shower of white polka dots. The Judas tree or redbud waits for more warmth to become a show of color. In early May, the dogwood and Judas trees are jewels of the landscape. The hawks have settled down to household duties. Hunting is more serious now than in the carefree days of March. At the base of the tower a lady slipper shyly blooms. Above, oaks and other hardwoods have small delicate leaves waving in the wind. The transformation now goes from spring into summer.

## OBSERVATIONS FROM THE TOWER

Commission photo by Kesteloo

# Gay Wings

By ELIZABETH MURRAY

Charlottesville

Illustrated by Lucile Walton

ONE of my favorite Virginia wild flowers, gay wings is special partly because it is not very common. I remember the sense of excitement which accompanied finding the flower in the mountains of Highland County a few years ago. I believe there are a number of good localities along 250 west in that area. Although it does bloom after transplanting, gay wings seldom multiplies, and I think in view of its relative scarcity we should urge everyone to leave it strictly alone when they find it. One friend tells me, though, there are carpets of it in spring in Rockingham County mountains.

Gay wings has a host of other common names: fringed polygala, fringed milkwort, flowering wintergreen, little polloin, baby's toes, bird-on-the-wing. The scientific name is *Polygala paucifolia* and it belongs to the milkwort family, Polygalaceae—a small family consisting mainly of herbs, with occasional shrubs or trees in the tropics. The plants have irregular hypogynous flowers (petals and stamens situated on the receptacle below the ovary and free from it). Filaments of the stamens are often united into a tube which is sometimes also joined to the petals. There are about a dozen genera in the family but in this latitude we have only one, *Polygala* itself, which has some 16 species in the eastern U.S.

Some of the milkwort species have two sets of flowers—"one for beauty and one for use, one playful for the world and one serious for posterity. Such milkworts, afraid that their fine flowers may fail to set seed, because the rains keep the bees indoors, or some other catastrophe occurs, have another set, much less showy, whose development was arrested in the bud. Without petals, nectaries or fragrance, the stamens of these inconspicuous flowers are small, their pistils immature, and they have nothing to offer the bee. But if their showy sisters fail to perpetuate the family, they step in, self-fertilized, and save it from extinction." This rather colorful passage appears in a 50-year-old book on wild flowers put out by the National Geographic Society. My scientific upbringing forces me to shy away from the anthropomorphic rationale, but the words do describe a highly interesting botanical phenomenon! In gay wings these minute 'hidden' flowers and fruits are actually borne on underground branches.



*Polygala paucifolia* is the prettiest of all the polygalas. It has the largest flowers of any of our native species, blooms being over an inch long. Flower construction is quite peculiar although at first glance it resembles that of an orchid. Two of the five sepals are petaloid and colored a glorious rose-pink. They form a pair of wide-spreading wings on either side of the corolla. The three petals of the corolla, which may be white or rose-pink, are united into a tube. Lowest petal is extended into an elaborately fringed 'keel.' This corolla tube encloses the pistil and six stamens, which are themselves united into a tube by their filaments, and joined onto the corolla. The corolla tube really protects the stamens and pistil, but when the correct pollinating insect arrives (bee), it alights on the fringed keel and depresses it so that the tube opens, stamens and pistil are exposed, and cross-pollination is achieved.

Gay wings is small, not more than three or four inches high. Lower leaves are minute and scale-like. Upper ones are oval, pointed, and gathered around the summit of the stem. Leaves stay on the plant all winter, turning reddish and bronzy before being replaced the following spring. Scarcity of leaves gives the plant its specific name, *paucifolia*, or 'few-leaved.' Generic name *Polygala* comes from the Greek words for 'many,' *poly*, and 'milk,' *gala*. Originator of the name was Dioscorides, a second-century physician responsible for naming about 600 plants.

There is an Alpine quality to this little flower—so pretty and delicate, yet colorful and striking with its exotic shape and relatively large blooms. Gay wings blooms from May to July in moist, deciduous woods, preferring rather light soil. Primarily a northeastern species, it is found as far down as Georgia and west to Illinois and Minnesota. At the southern end of its range it occurs only at higher elevations.

# VIRGINIA WILDLIFE CONSERVATIONGRAM

## **Commission Activities and Late Wildlife News . . . At A Glance**

## CONSERVATIONGRAM

VIRGINIA WILDLIFE

JUNE 1975

**\$2 MILLION IN CONTRABAND WILDLIFE SEIZED!** As part of its effort to halt illegal traffic in protected wildlife, the United States Fish and Wildlife Service has since 1971 seized more than two million dollars worth of contraband wildlife. The extent of the international trade in wildlife and wildlife products made from furs, hides, shells, feathers, teeth and tusks is enormous, and the market continues to grow. In 1972-73, more than 41 million wildlife products and some 220 million live animals and fish were legally imported into this country. The traffic in illegal wildlife and wildlife products is also high since some of the most beautiful and interesting wildlife products that can be bought by travelers abroad are made from animals protected by U.S. law. Fish and Wildlife Service agents in Virginia report they are spending more and more time on marine mammal and endangered species cases as these seem to be on the increase in the Commonwealth. A booklet on the subject, "Facts About Federal Wildlife Laws," is available free by writing the Department of the Interior, Washington, D.C. 20240.

RESTORATION REQUIRED. In what may come to be recognized as one of the most significant of all environmental legal decisions, reports the Sport Fishing Institute Bulletin, a Miami, Florida, Federal Judge, William O. Mehrtens, recently ordered a real estate developer to refill some channels he had dug on Key Largo, without benefit of permits or concern for the related environmental insult, as part of a trailer park facility. It will be interesting to note what sobering effect this costly restoration will have on other equally irresponsible real estate promotional developments around the country.

GLOBAL PROTECTION OF NATURAL AREAS. This is the theme for Earthcare, the 14th Biennial Wilderness Conference which is sponsored by the National Audubon Society and the Sierra Club. The Conference will be held at the New York Hilton Hotel this June 5-8. The program includes panels, symposia, and major addresses plus workshops and field trips on preservation of natural areas. A global conservation petition, entitled Earthcare, spells out basic principles for worldwide natural area protection. This document will be opened for signature at the United Nations on the first day of the Conference, World Environment Day. The Earthcare manifesto will be released for signature simultaneously by conservation organizations and individuals throughout the world.

HAGY WILDLIFE MANAGEMENT AREA CLOSED. Located in Lee and Wise counties, Hagy WMA is owned by the Penn Virginia Corporation and has been cooperatively managed by the Virginia Game Commission and has been open to public use for fishing and hunting. Penn Virginia has terminated the management agreement and the area will no longer be under public use management.

SMOKEY THE BEAR RETIRES. According to the National Zoo, Smokey Bear, the Forest Service fire prevention symbol, will retire. With his ranger's hat and shovel, Smokey has since 1950 become one of the most famous animals in the world. At 25, Smokey will, with his mate of many years, Goldie, go to the Ghost Ranch near Capitan, New Mexico, where a special enclosure has been constructed for them. We wish this very famous and very old black bear all the best in retirement.



## A Redbreast for the James

I'VE got one! I've got one! Dancing with excitement, nine year old Sam DeRosset turned the handle of his spinning reel, finally landing a plump James River Redbreast. After showing the fish to an admiring group of his peers, Sam looked thoughtfully at the fish, then again at the river. "I think I'll let him go," he said, stooping at the edge of the gravel bar on which we had camped for the night. Gently he put the fish in the water and watched as the confused creature got its bearings and darted away.

It was early Sunday morning of Memorial Day weekend and Sam's success with rod and reel soon proved contagious. Within moments the water was being whipped to a froth by his brother Bobby, Will DeRosset (a cousin), William Rowe, and Jimmy Wiseman. All five boys were on the second day of a father and son canoe-camping and fishing trip.

Adult members of our party consisted of Peter Rowe of Chesapeake, Bill DeRosset of Virginia Beach, Bob DeRosset of nearby Belhaven, North Carolina, and myself. Pete and Bob are both lawyers, and Bill is an officer in the Coast Guard. I'm an accountant and also reside in Virginia Beach. Along with our sons, who ranged from four to ten years old, we had rendezvoused the previous morning at the highway bridge on Route 637, where it crosses the Hardware River, some ten miles upstream from its confluence with the James. Steep banks on each side of the bridge offer a precarious access to the river. Sliding our canoes down the honey suckle-covered bank was no problem, but the narrow winding footpath of hard packed red clay was another matter. Freshly lubricated with morning dew, it proved more of a challenge than any of us could

Article and Photos by JOE WISEMAN  
*Virginia Beach*

master while carrying a heavily loaded Duluth Pack. After several near mishaps, we resorted to the use of long ropes for lowering the heaviest packs and ice chests from the bridge to the river below. In spite of our best efforts, it was 10:00 a.m. before all four canoes were loaded, the youngsters buttoned into life vests, and our intrepid group of adventurers headed downstream.

For those not acquainted with the Hardware, it is a jewel of a little stream. Beginning southwest of Charlottesville, it runs south and a little east, passing to the east of Scottsville on its way to the James. Hardly more than 15 to 20 yards wide for much of its length, it is interspersed with riffles and pools but has only one real rapid about 3/4 mile from its mouth.

Surrounding countryside is some of the Old Dominion's finest farmland: gently rolling hills and fertile fields. Cool waters and shade of the Hardware make it a favorite congregating place for cattle to graze along its banks. In many places great oaks along the river's edge stretch their branches from shore to shore making the river a shady corridor, with the sun occasionally peeping through the cracks in the ceiling.

On several occasions we paddled our canoes almost in touching distance to groups of cattle relaxing in the river. This was a high point of the trip for the youngsters, city boys for the most part, who rarely get close to farm animals.

We found fishing on the Hardware pretty slow, but four canoes (three of them aluminum), four adults and

five kids on a river as small as the Hardware doesn't make for a very stealthy group. We really didn't miss the fishing as we soon learned that recent storms and high water had provided a full day's activity for us.

We hit our first windfall just before lunch. A large oak tree some two feet or more in diameter had blown down, completely spanning the narrow stream. High water and fast current had packed smaller logs and brush all around the fallen tree. River banks were too steep for a portage, so the only route was up and over. Each took his turn climbing out onto the offending log, then balancing like a drunken high-wire performer while dragging the loaded canoe over the obstruction and hopping back aboard on the downstream side. It was a delicate and sometimes humorous operation, but miraculously everyone stayed dry.

Second windfall some 30 minutes later proved only mildly amusing, while the third was just plain annoying. In this case we had to portage some 50 yards around a jumble of downed timber too unstable to bear our weight. By the time we had dragged not over or around but right through the middle of the fourth and most difficult windfall, we were pretty near the edge of exhaustion. Fortunately, that was the last major obstacle and we soon passed the river's only rapid and had a clear course to the James.

Unlike the Hardware, the James is no mere stream. It is big, deep, with substantial current, and in higher water levels can offer complex white-water conditions. As one of Virginia's finest canoeing rivers, it should always be respected and never taken lightly. We happened to catch her at an ideal water level for easy

canoeing and productive fishing.

There are few places where one can find the variety that this section of the James provides. One minute you are in the middle of a wide, lazily rolling river that lulls you into complacency. The next moment you are in the grip of quickening current as the river divides, and then divides again. Heavily wooded islands appear, seemingly out of nowhere. Ahead you hear the sound of white water. Moderate rapids add zest to the run, and form deep pools where smallmouth often feed.

It was on one of these islands that our party made camp for the night. Pete got a fire going. The rest pitched tents, dried wet clothes, and unrolled sleeping bags. The menu was simple—beans and franks, but prime ribs with all the trimmings never tasted better. The exertion of the day had taken its toll, and well before dark young heads began to bob.

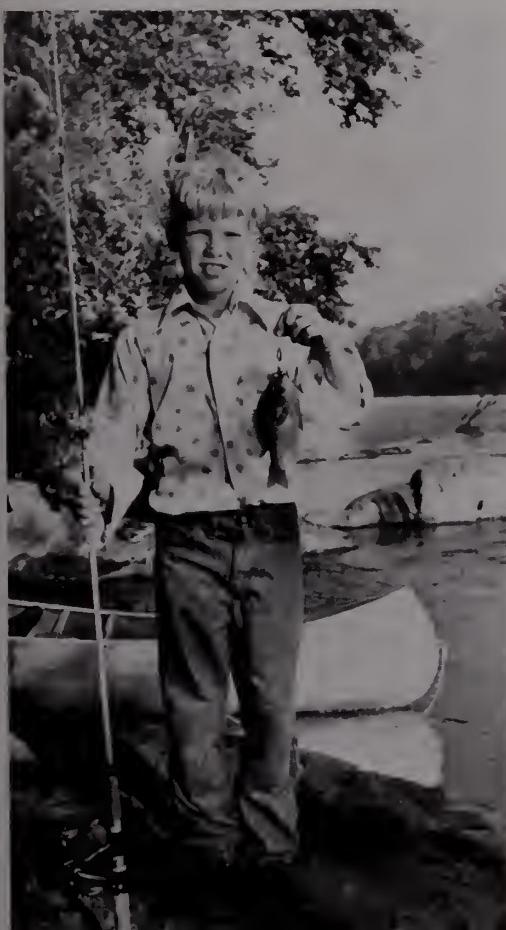
Jimmy Wiseman caught his first fish next day before Pete started breakfast. Sam DeRosset scored next, then everybody got in the act using light spinning rods and small single-blade spinners. After breakfast we unhurriedly packed up. The boys fished and swam from our doorstep gravel bar; older folks mostly relaxed.

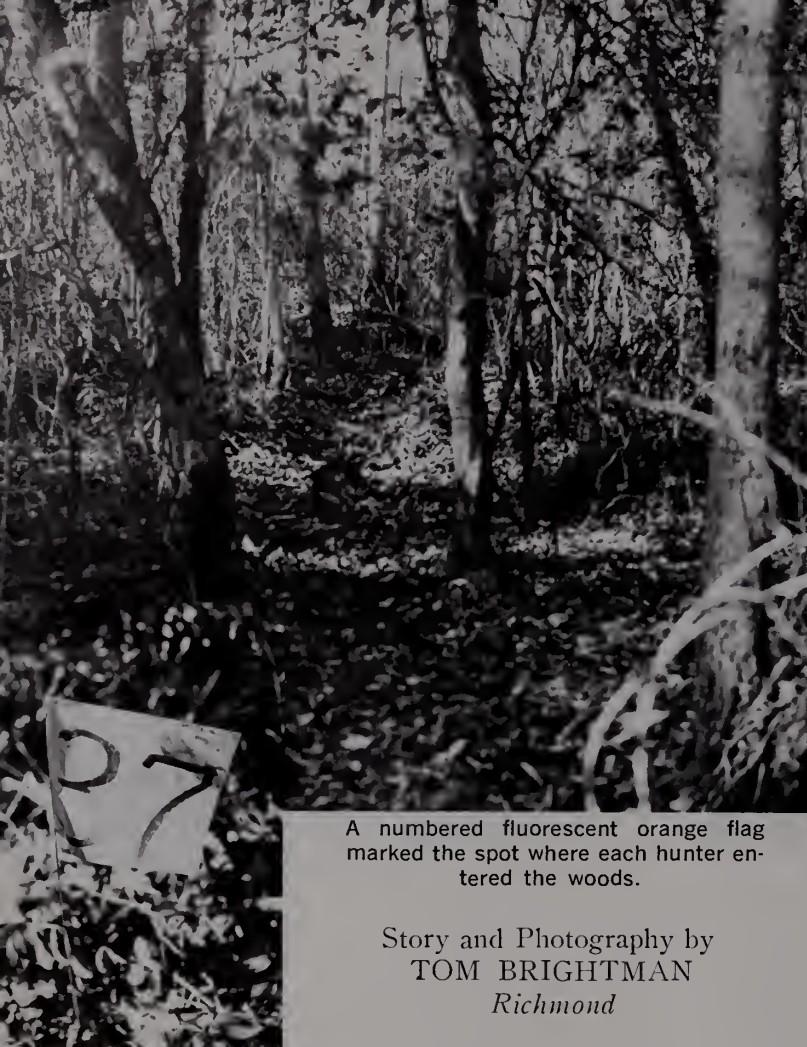
It was 10:00 a.m. when we pushed away from our campsite and felt the James tug at our paddles. An hour of delightful running through winding, twisting channels and occasional light rapids put most of the islands behind us. We stopped for an early lunch, then pushed on to our take-out point at Bremo Bluff.

As we ran the last rapid beneath the bridge at Bremo, I couldn't help but wonder about the long-term effects of this and other trips to follow. We had planned this outing not only to spend time with our sons, but so our sons could spend time with the river. If the Hardware, James, and other rivers like them are to have any chance for survival in the future, they will need the understanding and protection of people who know them firsthand. This weekend had been an investment in that future. Meanwhile, I find great encouragement in the memory of young Sam DeRosset kneeling on a gravel bar, by his own decision, returning to the river his colorful redbreast, free and unharmed.

Jimmy Wiseman with first fish of the day.

Bob DeRosset with sons Sam and Bobby paddle among cattle on the Hardware River. Jimmy Wiseman in foreground.





# DISMAL SWAMP DEER HUNT:

## A Natural Success

fires, finding lost persons, disposing of litter, etc. On February 22, 1973, Union Camp gave its nearly 50,000 acres of the swamp to the Nature Conservancy which, in turn, gift-deeded the parcel to the U.S. Department of the Interior for management as a National Wildlife Refuge. Now that the land was vested in the public interest, private hunt clubs no longer enjoyed exclusive privileges, regardless of their past contributions. By the same token, the Interior had to have justification for hunting on the refuge. Data demonstrating that a harvest was necessary to the health of the herd—as well as to other life forms upon which deer overpopulation would have a negative impact—did not exist; and there wasn't enough time to obtain it for a 1973 hunt.

The decision to wait allowed 15 months for intensive biologic assessment. The refuge instituted controlled inquiries by government and university personnel. Studies involved the surveying of browse distribution and condition, evaluation of intestinal parasites indicative of a herd's health, and the testing of deer hair samples for protein content. Preliminary results showed the herd to be increasing at the rate of 40% per year—an alarming figure since Dismal Swamp terrain can hold only 4/10 as many deer as an upland forest of equal acreage.

Final plan for conducting hunts to avoid environmental damage called for a controlled, experimental-type hunt as opposed to full-scale herd management techniques. There would be a public drawing. The 120 winning hunters would be divided into groups of 40 hunters, each group to hunt for three consecutive Saturdays. No dogs would be used. This last qualification predicted a small harvest and gave rise to the term "volunteer" deer. A deer had to voluntarily move out of the dense cover to give a hunter a shot.

Two weeks before this first hunt, each man had received an information package containing maps, safety tips, specifications for weapons and ammunition, regulations, and interesting background articles on the swamp and its wildlife. Now, as daylight began to break, the hunters were anxious to be afield. Two refuge employees moved deliberately but quickly along the ragged line of outdoorsmen. "Twelve gauge? That's good! Magazine plugged—double-O buck shot. O.K. You're ready to go. We'll take you to your stand just as soon as the weapons check is completed. Take this numbered fluorescent orange flag with you and stick it in the side of the road anytime you go into the under-

A numbered fluorescent orange flag marked the spot where each hunter entered the woods.

Story and Photography by  
TOM BRIGHTMAN  
*Richmond*

IT was a chilly, misty morning in the Great Dismal Swamp, typical of a fall day in this forested peat bog where the environment confuses nature and yields a marvelous blend of flora and fauna—some unique the world over. Well before dawn of October 5, 1974, a variety of vehicles began creeping along historic Jericho Ditch searching for a sign that they had arrived to begin the first public deer hunt in the Dismal Swamp National Wildlife Refuge. The ominous quiet of pre-dawn in this land of the legendary Lake Drummond became much more hospitable when refuge personnel emerged to welcome the visitors. Soon sounds of an awakening bog were joined by popping thermoses, steaming coffee, and the buffeting of arms and legs to overcome the clinging chill. Events of this and eight other consecutive Saturday hunts would win many uninitiated to the ranks of those who revel in this Virginia-North Carolina wilderness treasure.

Refuge personnel had considered a public hunt in 1973, but there were too many pressing priorities and too few answers to the questions they knew must be answered for justification of herd control.

Previous generations of Dismal Swamp hunts for bear as well as deer had simply considered state laws, general indications of herd health, and special permits granted by Union Camp Corporation to the 17 exclusive hunt clubs who assisted Union Camp in fighting

story. If you become lost, it will show us where you last left the road."

Soon the bus and four-wheel-drive jeep truck were loaded with 20-some hunters enroute down the long, straight, slave-dug, spoil-bank roads. Everyone was congenial—if impatient. Finally each man was on his assigned stand, far enough apart to be free to move about as long as the bright orange flag went along. (A compass is useless in most parts of the Dismal Swamp as magnetic anomalies prevent true readings. The Great Dismal is steeped in stories of those who carelessly wandered in only to be hopelessly lost.)

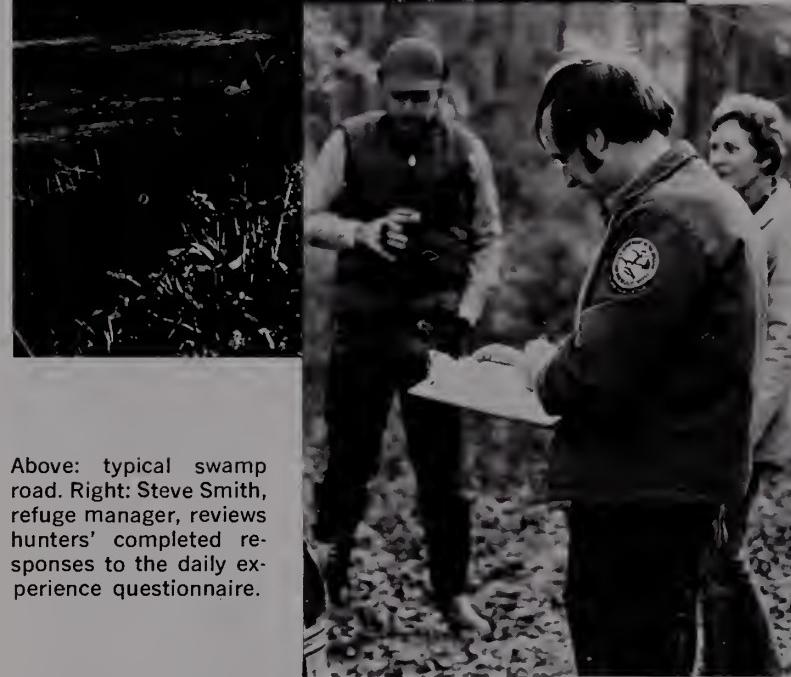
A black duck glided effortlessly through duck weed in search of an early meal when, like lightning, the quiet was transformed into a squawking, fluttering, splashing struggle for life. The duck wasn't the only creature seeking breakfast. That blunt stick protruding from the canal's surface wasn't a stick at all; rather, a giant snapping turtle common in the swamp. A wiser if weakened duck flew off to recover, dragging a mangled limb.

One hunter bathed his garments in buck scent. No sooner had he finished the dousing and returned to his ditch-side stand than two otters came running up to see "what the smelly beast looked like." I don't know if he has since complained to the manufacturer about mislabeling, but I would have.

On another ditch, a sow bear broke out of the underbrush to scent the air and seek passage across the ditch. Noticing a foot bridge for hunters a short distance away, she changed course and took the dry bridge route, shortly to be accompanied in single file by her yearling cubs. Twenty minutes later, a fourth bear emerged and followed the same course.

Hunters reported seeing otter, fox, ducks, birds, bear, turtles, squirrels, owls, pileated woodpeckers and even one wild turkey—long believed to be absent from the swamp today though prolific in its past.

Hunter attendance the nine Saturdays varied from 85 to 45 percent. The four deer removed by the hunt were spike bucks ranging in age from  $3\frac{1}{2}$  to  $1\frac{1}{2}$  years. To the hunters, shooting of a deer seemed secondary to the simple pleasure of being in the woods of the Great Dismal Swamp—long off bounds to most of the



Above: typical swamp road. Right: Steve Smith, refuge manager, reviews hunters' completed responses to the daily experience questionnaire.



Photo by  
George McKenna

Drive dogs retrieved from Dismal's dense growth in days when private hunt clubs controlled hunting in the swamp. Dogs were NOT used in the Dismal's first public deer hunt.

American public. Hunters completed questionnaires at the conclusion of each day's hunting. Their comments should aid in determining future policy. The absence of dogs for moving deer (still hunting), was an important on-location experience. No hunters were lost. Transportation systems, buses for large groups, jeep truck for small groups, worked well. The hunt was a "natural" success—as the Great Dismal Swamp, when met on its own terms and at its own pace, is uniquely entertaining and absorbing.

The hunt was not a success as a biological control procedure since only four deer were harvested, but I don't believe the Interior personnel really expected that kind of success. Many decisions remain. The preliminary biological census data indicate that the Swamp deer herd is at or above the carrying capacity of the refuge, suggesting the need for a larger hunt. Having shared the wonderment and excitement of last year's pioneering public hunters in the Great Dismal, I for one will be ready to fill out an application for the next lottery.

# Make Your Own

By DWIGHT L. PETERSON  
Clinton, North Carolina

IT's just one of those days, I thought to myself and watched my wife a short distance down the beach from me. Slack line dangled from the eyelets of her surf rod and she was examining the open-face spinning reel beneath the rod.

"Forget to lift the bail?" I asked.

She looked up and half-heartedly shrugged her shoulders. "No," she answered and began checking the rod tip. "It's just me, I suppose. I'll have to get used to this new rod and reel."

I anchored my rod and holder in the sand and went over to lend a hand. From the tackle box I took out another bottom rig and snapped on the hooks and sinker. We had been fishing about 45 minutes and this was the second rig we had lost. The children, who were sharing a rod, had lost one earlier when their rig hung up offshore and the line had to be broken.

I had been lucky until I went back to my rod and found I was hung up. After several minutes of trying every trick I knew to free the rig, I gave up, broke the line, and reeled in.

Standing there with slack line dangling from my rod tip made me feel a little grateful that I had made most of the rigs and sinkers my family and I were using. And, too, there is a certain satisfaction that can be gained with do-it-yourself.

Lead sinkers can be made very easily at a cost of nothing to not more than a few cents. As you know, lead sinker *molds* can be purchased for about any type or shape sinker you desire. With my method of making sinkers this isn't necessary, though you will have to sacrifice certain qualities such as sleek, handsome, finished products. Also, you're confined to certain shapes and types. The pyramid shaped sinker will be the easiest to make and will probably be most popular with you. But with a little thought and effort other types can be made.

The mold you use is nothing more than *dirt*, or *sand*. Find a container about four to six inches in diameter at top and bottom, and about the same measurement in depth. Containers such as flower pots and large coffee cans are fine. Fill the container with dirt or sand. Fine grain sand seems to work best, but whichever of these you use, be sure it's clean. Bits of leaves, stems, woody particles and similar objects should be removed if possible. When your container is full, moisten the dirt/sand molding material and pack it down level.

Next, you'll need a can in which to melt your lead. The can (soup can, or other) should be made from

4-oz. pyramid-type sinker mold in moistened sand. Container is a flower pot. Lead melting can contains pouring lip and flange handle for gripping with pliers.

Hold fastener in center of mold impression with one hand while pouring lead into mold with the other. Pliers are used for both jobs.

FINISHED SINKERS: sliding (top); bell shaped; pyramid; and author's original design (bottom center).



# Sinkers

fairly good metal; not one of the soft types common on today's market. It doesn't have to be large but should be cleaned thoroughly before using. With pliers, bend a flange outward from the top of the can and on the seam where the can was put together. The flange should be large enough to be gripped with the pliers, forming a handle. On either side of the can from the handle or flange position (this will depend upon whether you're left or right handed), pinch the can in such a way as to form a lip for pouring.

Lead for your sinkers can be obtained from several sources. It can be purchased, or you may know of sources where you can get it without cost. Remember, lead can be melted and reformed as many times as you wish. If you have lead objects that are of no use to you, remelt these for your sinkers. One good source are lead weights used for balancing tires. These weights, which are clamped on the tire rim, do wear out and many times are turned back to the company that made them. But a service station operator may give you a few.

Since we are concerned with making sinkers at little or no cost, your heat source to melt the lead should be modest. For instance, a campfire. Find a safe place to build a small fire and use wood, such as oak, for fuel. You'll want good, hot coals. A gasoline stove, a hot plate or even the kitchen range will serve as a heat source in a pinch.

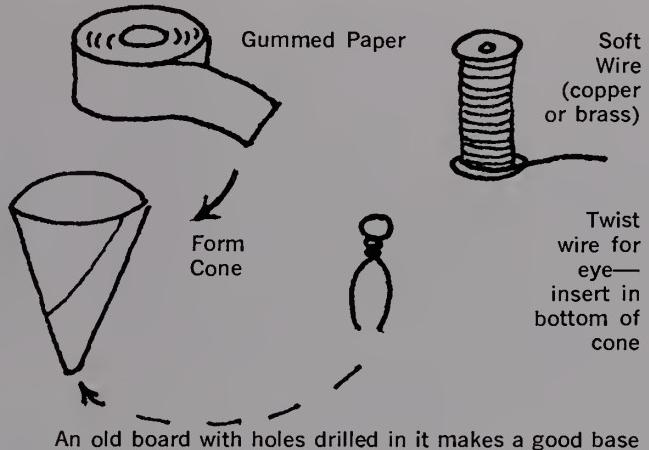
You now have your mold, your can for melting, lead and heat. Let's say you want to make a pyramid type sinker. Be sure your molding substance (dirt/sand) is moist. Press a sinker, like the one you wish to make or imitate, down into the molding substance. It should be pressed down until level with the molding substance. With finger pressure, press the molding substance firmly around the imitator sinker. Now, gently lift the imitator sinker from the molding substance. Try carefully not to disturb the impression.

Drop your lead into your melting can and grip the flanged edge with pliers. Seat the can firmly on hot coals so it will not tip over. Release the pliers because you'll use them only when moving the can. The lead should be melted to a point where it will run like water. If coals are hot, this will take only a few minutes.

With the pyramid type sinker you'll need an attachment, or hook, or some method of fastening the line to the sinker. Use a swivel of some type, maybe a snap swivel, or simply cut and make a fastener from wire. If you make a fastener from wire, snip off about one inch, bend to U-shape, then bend the ends outward. This outward bend of the wire serves as an anchor inside the sinker. It prevents the fastener from slipping

## ANOTHER WAY . . .

by J. H. Ballard, Arlington



out of the sinker.

You'll need two pair of pliers at this point: one to handle the melting can; the other to hold the fastener in position while pouring. Grip the fastener at the top with pliers, and hold it (centered) in the hollow impression of the mold. Be sure loop portion of fastener, where you'll attach your line, is above the level of the impression. Carefully pour melted lead into the hollow impression. After the lead has cooled, remove sinker. Rub it between your palms to free particles of dirt/sand that might have stuck to it. Lead cuts easily, so if there are edges or unwanted rough portions, trim them off. If you aren't satisfied with the sinker, drop it back into the can and repeat the process. It is desirable to remoisten the molding substance after each process and remake the sinker impression.

After experience with this method of sinker making, you should be able to make other types and shapes. I can make about any shape I need except split-shot. With a little imagination you might be able to succeed with split-shot. With other types, say the egg shaped sliding sinker, you'll have to sacrifice one rounded side or end. This is understandable because you can mold only one rounded portion of the sinker. But the hole passing through the sinker is no problem. After you have made your impression, simply push a new, shiny nail in the center of the impression and down into the molding substance. Pour your lead into the impression and around nail. When lead has cooled, lift the sinker out and remove nail with pliers. It will slip out fairly easily.

As I said before, your sinkers will not look like factory-made products. But they do serve the purpose for which they were intended. Best of all, the sinkers are *dirt cheap*.

# Crop Milk Production in Mourning Doves

Leonard Rue photos



THE mourning dove is a well-known species in this country as it nests in all of the continental United States. It is a popular game bird with hunters in many states, particularly of the Southeast. A popular nongame species as well, it is attractive and it nests in suitable suburban locations.

A unique aspect of the reproductive biology of the mourning dove and of other members of the *Columbidae* is that these birds produce crop-milk for the nourishment of young. Toward the end of the hatching period the crop lining of both the male and female of the hatching pair responds to hormones and develops. This development results in substantial thickening of the crop wall, and the anatomical changes are readily apparent. Cells on the crop wall slough off and form the substance called crop-milk. In chemical composition crop-milk consists largely of protein and fat with no carbohydrate present. It resembles milk-curds in physical appearance. Of interest is the fact that the hormone mechanism which controls crop-milk production is the same as that which controls milk production in mammals.

Soon after hatching young dove squabs are fed crop-milk by the parent birds. Crop-milk is regurgitated and "pumped" directly into the squab's crop by the parent birds. During the first few days after hatching the squab receives crop-milk only. Later, seeds from the parent's crop are also transferred. Gradually the proportion of crop-milk to seeds changes, and eventually the young birds receive only seeds.

A major disadvantage of this method of raising young is that disease may readily be transferred from parents to young. One such disease is Trichomoniasis, which is considered a major source of loss of young doves.

By P. F. SCANLON  
*Department of Fisheries and Wildlife Sciences  
VPI & SU, Blacksburg*

This property of crop-milk production is of potential use in the management of the mourning dove as the developed crop-gland (readily identifiable) is indicative of post-hatching nesting activity of the bird. Biologists could use this information to determine when mourning doves were raising young and to decide whether the hunting season is in serious conflict with end-of-the-nesting season of the doves. At present, the limiting factor in utilizing this information is lack of knowledge of the pattern of regression of anatomical changes in the mourning dove crop. Length of persistence of these anatomical changes after hatching is not known. Knowledge of whether these anatomical features persist after crop-milk production ceases and to what stage these anatomical changes persist after hatching of young is necessary to draw useful conclusions from results obtained from hunter-killed birds.

Research at Virginia Polytechnic Institute and State University is aimed at estimating the proportion of doves with crop activity among those harvested during the Virginia hunting season. This information on the proportion of doves with developed crops together with data on reproductive organs of female birds and information on the persistence of the anatomical changes associated with crop-milk production will ultimately help to set hunting seasons at times when conflict with nesting activities is minimal, yet early enough to provide satisfactory harvest of doves.

To these ends mourning doves harvested by hunters at the Elm Hill Wildlife Management Area have been studied during 1971, 1972, 1973 and 1974 for presence of developed crop-glands. It is hoped to study captive birds to determine persistence of crop-gland development after hatching and its relationship to fledging of young. The fine cooperation of hunters at the Elm Hill Management Area in donating carcasses of doves for these studies is appreciated.



## Integrated Nest Fails

Text & Photos  
By TATE YOUNG, JR.  
*Hampton*

ON May 20, 1974, I was fortunate to witness and photograph an unusual occurrence involving a female cardinal and a female robin. It began with the robin hurriedly building a nest to lay her eggs. When she was about half through, I began noticing a cardinal flying back and forth to the nest, then saw her carrying building material and working on the nest. During construction I never saw the cardinal or robin meet. It seemed neither knew of the other's work.

After the nest was completed, the cardinal left. The robin occupied the nest and laid two eggs. I thought I had seen the last of the cardinal and was waiting patiently to photograph robin eggs when they hatched. One day as I watched the nest from inside a building I saw the cardinal again. She flew into the nest and sat there while I watched amazed at what was happening. During the next week I observed both birds entering and leaving the nest. I climbed a ladder, looked into the nest, and was surprised to find two robin eggs and three cardinal eggs.

The two birds began taking turns sitting on the eggs. They alternated at two or three hour intervals and seemed to be getting along very well with each other. After several days of sharing responsibilities, the female robin returned to the nest while the cardinal was away and destroyed two of the cardinal's eggs. Later, in retaliation, the cardinal destroyed one robin egg. Since then, neither bird has returned to the nest. I'm disappointed that the eggs didn't hatch and allow me the rare opportunity of photographing the young of an integrated bird nest.

Integrated  
nest holds  
2 robin, 3  
cardinal eggs.



# WILDERNESS

Text & Photos by PAUL BRATTON JR.  
*Deerfield*

THE living wilderness is fragile. A mature forest, requiring centuries to reach its climax stage, can be destroyed in a matter of weeks. An untouched valley can be dammed and flooded, disappearing under water and silt, never to be seen again. With creation of the National Wilderness Preservation System, Congress recognized the necessity of legal protection as more and more wild land disappears under the flood of "progress."

The recent passage of the eastern wilderness act brings five areas of Virginia's national forests into the wilderness system for the first time. The James River Face wilderness, covering 8,800 acres in the Jefferson National Forest, has been declared an "instant wilderness" with permanent protection. Four other areas are designated study areas and given immediate protection while their boundaries and suitability under the wilderness acts are determined. Mill Creek, 4,000 acres, Mountain Lake, 8,400 acres, and Peters Mountain, 6,700 acres, are in the Jefferson National Forest. Ramsey's Draft, 6,700 acres, is part of the George Washington National Forest.

Public hearings will be held near each study area as a prescribed part of the wilderness process. Citizens may examine the study areas and present their views at the hearings. After public comment and study, to be completed by 1980, the areas will be submitted to Congress for permanent protection.

Wilderness. The word creates a different image to each. Some think of a dark, forbidding land where every step brings danger. To others it is a pristine trout stream coursing over boulders and through towering hemlocks in a mountain hollow. To America, it is a priceless heritage containing diverse resources of native plant and wild life.

The Wilderness Society, having organized to "fight for the freedom of the wilderness," helped lead the battle for a wilderness system. Howard Zahniser formulated the definition included in the wilderness act of 1964 while serving as executive secretary of the Society. "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." With these words, the United States created the wilderness system providing a means to protect Federal land that retained its primeval character.



Though by definition closed to highways and commercial development, the wilderness is open to many uses that cannot exist with development. Each person can find rewards in wilderness unavailable elsewhere.

Watershed protection, the purpose for which the eastern national forests were formed in 1911 under the Weeks law, is wholly compatible with wilderness. Virgin forests offer the best protection against disastrous floods. The deep carpet of mosses and fallen leaves holds rainfall, preventing fast runoff, preventing floods, far better and cheaper than dams.

The naturalist and scientist find a source of research and study untainted by man's intervention. Wilderness, like all healthy organisms, constantly renews itself. Aldo Leopold wrote about establishing a science of land health with wilderness considered "a base datum of normality."

Growing popularity of the bow and blackpowder rifle among Virginia's hunters indicates the desire for the primitive hunting found in wilderness areas. Deer population is often highest where field and forest intermix. But a chance to search for the wary mountain bucks far from highways and other hunters is needed for a balance of hunting opportunities.

Some wildlife adapts well to man and is more common today than ever, but other wildlife cannot exist unless it is protected from the intrusions of civilization. Native brook trout survive and reproduce only in pure, cold streams. They need wilderness conditions and the fisherman must follow the streams high into the mountains to find them. Wilderness areas provide the undisturbed habitat necessary for black bear, golden eagles, and perhaps even the eastern panther.

Henry David Thoreau was one of the first to see the need for wilderness preserves. "Why should not we, who have renounced the king's authority, have our national preserves . . . ?" Thoreau wrote, "in which the bear and the panther may still exist, and not be 'civilized off the face of the earth'—our own forests not to hold the king's game merely, but for inspiration and our own true recreation?"

Thoreau recognized wilderness as more than a source

Clear, cold streams flow from mountainous, wilderness areas.



Puffball mushrooms on decaying stump. Fungi and lichens help break down dead wood, creating humus to provide a base for new life in the wilderness.

of trout streams. With the loss of open lands to the concrete and clamor of civilization, man needs the sanctuary of wilderness as desperately as wildlife.

A climb to a mountain peak brings exhilaration and a night under the stars brings peace. The joys of the wilderness are open to all and will remain, thanks to the eastern wilderness act.



Leonard Rue photo  
The beaver is considered by many as a symbol of wilderness.

# Get Acquainted with the World

By CARSTEN AHRENS  
Pittsburgh

**W**E need help, Ranger; we're bored!"

The Carlisle boy in the gateway was explaining his family predicament. "We've looked forward to this vacation all through last winter; we've made plans to be here all summer, and I'm tired of it after two days!"

"Why don't you build a nature trail?" I suggested. "If you are planning to live in the woods, you should get acquainted with your woodland neighbors. Since your plant neighbors aren't able to come calling on you, why not make a path that will lead you to them?" Perhaps it was desperation that led them to accept my suggestion.

Their ten-acre plot was admirably suited for a good nature trail, and we laid it out on paper with care. The trail would lead to all the different habitats that the area contained. There were seven: most of the land was an open forest with a fine variety of hardwood species, but there was also a thicket of witch hazel and other shrubs, an almost bare hill top, a tangle of rhododendron and hemlock near the stream, the stream itself, one corner of an abandoned limestone quarry, and a small bog crowded with skunk cabbage and alder.

By the time Mr. Carlisle had to return to the city, he and the boys had staked out the entire trail which, with several short side paths, must have been a sixth of a mile in length.

During the week, the boys worked on the trail, laid stepping stones to skirt the bog, made an opening through the thicket, planned a homemade but sturdy ladder down the quarry cliff, and began a rustic bridge across the noisy mountain stream.

I prepared a list of items for Mr. Carlisle to bring from the city: bird books, insect books, flower and tree guides, white paint, tin, wire, India ink, pens, brushes, and a pound of short, rust-proof nails. We decided that every species of plant and tree should be identified twice . . . as a means of getting acquainted, and of showing the difference (often striking) between young and old plants.

The tin was cut into different sized strips, painted white and, after drying, printed upon with the waterproof India ink. The boy's sister, Virginia, would neatly print on the tin label information about each species. Plant keys helped in identification.

This label would be wired or nailed to the proper

tree or, in case of a small plant, attached to a stake nearby. None of the strips were larger than necessary and were placed so that they did not give a cluttered appearance to the trail. Later on we discovered a biological supply house sold inexpensive plastic labels that were uniform in size and saved time.

Below common and scientific names, Virginia printed some fact about each plant. This helped the children to remember the names. For instance:

## RHODODENDRON

*Rhododendron maximum*

Although the word means "Rose Tree," the shrub belongs to the Heath and not to the Rose Family.

## DANDELION

*Taraxacum officinale*

From the Latin meaning "lion's tooth," which refers to the notched leaves.

## TULIP TREE

or

## YELLOW POPLAR

*Liriodendron tulipifera*

In Poe's story, GOLDBUG, Jupiter dropped a beetle through the skull that hung in a giant tulip tree.

This labeling required some research on the part of the boys; they became acquainted with the dictionary, mythologies, classics, as well as popular and scientific plant guides. Soon they discovered there were other plants on the mountainside not growing along their path. They learned to transplant. A wooly mullein was made to grow on the hill top. A stand of hepaticas was moved to a similar habitat on the trail. A lone cucumber tree was discovered after the path was completed; it was far too big to be moved, so a special footpath was made to its base.

The boys decided to mark signs of interesting activity of other sorts along the trail. Here and there they mounted a white arrow with a label attached to point out such objects as fossils in the quarry wall, workers' entrance to a bee tree, flicker nest, muskrat lodge, hornet nest, summer squirrel nest, various bird homes that had differing architecture, groundhog burrow, praying mantis egg case, goldenrod galls, cecropia cocoon, year rings in a well-preserved stump, etc.

On a trip to town, Mrs. Carlisle brought back dozens of flowering plants—snapdragons, marigolds, petunias, etc.—to "dress up" the path. But the boys convinced her that a nature trail should be inhabited by native plants if it were to be natural. They made a garden about the summer house for her flowers, which suited her very well.

Why not plan a nature trail at your camp or make one near your home? Wouldn't it be wonderful if every child in America could have access to such a trail!

Mr. Ahrens is a retired National Park Ranger-naturalist and high school biology teacher.

# BLOWTOADS

By MARJORIE LATHAM MASSELIN  
*Richmond*

IT takes a certain amount of open-mindedness coupled with an adventurous soul to try *any* new and strange food, but I always think that whoever decided to test the edibility of these repellent creatures must simply have been on the verge of starvation! Assuredly, their unlovely exterior gives no hint of the delicate and agreeable flesh beneath. About the nicest thing that can be said of them is that it is so very easy to separate the one from the other. Given a good sharp knife, you can have a dozen of them ready to cook in the time it takes to heat the pan and melt the butter.

The great thing about blowtoads is that they blow themselves up, and that, I should think, might account for the fact that their skin fits them in such a saggy-baggy manner that it slips right off from tail to gill, and one swift stroke with a heavy knife (because they do possess extraordinarily strong vertebrae) decapitates, leaving the cook with a small but exquisite morsel for the pan. The flesh is white, firm and juicy; practically boneless; and comes off, when cooked, in two luscious nuggets from either side of that heavy spinal bone.

The first time I tasted these fish, I found them listed on a menu as "Sea Squab." Not having the faintest idea what *that* was, I ordered them, ate them and was no wiser than before except that having been deep-fried they were rather crisp and dry and tasted like nothing in particular except french-fried fish. I cross-examined the waiter and was told that the fish came from the York River. Whether he had been mislead or misinformed I could not say, but so far as I have been able to discover since, the blowtoad is an ocean fish . . . estuary, perhaps . . . but not strictly speaking a freshwater fish. That led me astray for a time because I could never find a freshwater fish with a silhouette that bore any resemblance to this thing I had dined on. Eventually, I saw a tray on a fish counter labeled "Sea Chix," and both the name and the skinless shapes seemed to be worth a few questions and the investment of a dollar to experiment.

The large ruddy-faced chap who presides over this particular fish counter is an amiable sort who seems to enjoy a bit of conversation when the customers are not lined up and clamoring, so I asked and was told.

"Wonder why they skin them, though?" I wanted to know.

"Lady," he replied with a chuckle, "You ain't never

seen a blowtoad, I guess, have you?"

Later on I did and understood.

Everything considered, we have never been overly enthusiastic about french-fried fish of any kind, but on the assumption that any number of mishaps may befall a dish between the time it leaves the hands of the chef and is placed before the diner, I thought I would just go on and french fry a few of them. They were good, but certainly nothing extraordinary and not appreciably better than those I had eaten in the restaurant. Consequently, I prepared the rest in the manner that I consider the absolute best way to prepare small fresh fish. That is to crumb them lightly and sauté in plenty of fresh, sweet butter.

Since fish, especially such small fish as these, should cook quickly and be crisp on the outside, it is wise to use clarified butter. The easiest way to get this is to melt the amount you expect to need in a small saucepan over low heat. Then allow the milky residue to settle out in the bottom of the pan, and make sure that it remains there by taking care to pour off the golden liquid slowly enough not to rile or disturb it.

In order to keep the crumbs on the fish and not lose all of them in the pan, each fish should be dipped first into slightly beaten egg or just egg yolk if you happen to have some left over and no particular use for them. The egg can be thinned with a few drops of water if it seems very thick, but it shouldn't be so liquid that it fails to adhere. Roll each fish carefully in fine, dry bread crumbs and press these gently onto the flesh of the fish. Give the egg a minute or two to combine with the crumbs so that a crust will be formed and then slip them, one at a time, into a heavy iron or copper pan in which there is about half an inch of hot butter. Let them sizzle until brown on one side, and then turn once to brown the other side.

The butter in the pan after all the fish are cooked, should be cleared of the crumbs, taking special care to get out all that may be burned or on the verge of being burned, and then, if you like, fry a little chopped fresh parsley in the butter. Pour this over the fish, which should be waiting on a *hot* platter, and serve at once.

There are some foods that wine just doesn't seem to do a thing for, and as far as I am concerned these fish fall in that category. Delicious as they are, they simply are not "company" food. They are something one enjoys at home for an ordinary supper, and we most enjoy having them with a stein of good beer and a bowl of really fresh snaps—fresh enough so that they still "taste of the garden." And since I am going to douse the beans in butter, I like to pull up a young leek or two, mince them very finely and cook in the butter just long enough to soften them and flavor the butter. Incidentally, this is the best way to use that leftover butter that was clarified for frying the fish including the milky residue which will do nothing but enhance the flavor of the vegetables.



Edited by MEL WHITE  
**Camps in the News**

NRA

In July and August, 1975, the National Rifle Association will conduct a pilot conservation camp for fifteen 16-18 year olds at the 37,000 acre National Outdoor Center near Raton, New Mexico. The camp will give young people an opportunity to participate in a wilderness experience and gain an appreciation of the effort involved in conserving our priceless natural resources. With its grasslands and rolling mountains, the Center is an ideal setting for students to plan and implement conservation projects in wildlife management, landscaping, hydrology, archeology, erosion control, forestry, and ecological research.

Work on the projects will occupy the first two weeks of the session and will be interspersed with field trips and guest speakers from various agencies. Third week will be strictly for educational pleasure, with backpack trips and visits to interesting areas in northern New Mexico and southern Colorado. Living arrangements will be primitive tent camps. Students will be supervised by trained specialists selected by the NRA staff.

Civic, business, and industrial groups are asked to sponsor this project. Cost per student: \$400. Further information and applications are available from NRA Conservation Camp, National Rifle Association, 1600 Rhode Island Avenue, NW, Washington, DC 20036.

**VESUVIUS**

Summer 1975 will be the 33rd year of Nature Camp's existence at Vesuvius, where four 2-week summer sessions for 5th-12th grade Virginia youth are held. Begun in 1942 under the direction of Mrs. Fred Schilling, who guided the program for 27 years, the camp is a project of the Virginia Federation of Garden Clubs. Its purpose: to produce a corps of knowledgeable future citizens who so love the world



Bob Creel holds his new Virginia state record largemouth bass. The 14 lb 2 oz. fish was caught on Songbird Creek, Gaston Lake.

that they will fight a strong battle to protect it and keep it as it should be maintained. The physical part of camp consists of 10 brown buildings which blend in with their forest surroundings.

This year Nature Camp takes on a new dimension as its staff prepares to offer a course to Virginia adults. This first adult session will be held three or five days in early June, with instruction in archeology, botany, entomology, geology, limnology, herpetology, navigation and meteorology, wildlife management, wildlife art, and wilderness living (survival). Campers may choose a major field to specialize in or have an investigative look at a combination of several topics.

Many staff members are graduate students in their chosen fields. Nature Camp Director is Colonel John Reeves, Jr., a faculty member of Virginia Military Institute, Lexington. He will be an instructor in the adult session and intends to hold seminars on the development of man and man's relationship to the environment.

**Books, Books, Books, Books, Books**

Experienced birders are known to have read it front to back three times without stopping, and a few novices have not let their copies leave their hands at all. This long-awaited book, so helpful to bird students, is THE BIRDS OF LYNCHBURG, VIRGINIA AND VICINITY, by Dr. Ruskin S. Freer, recently published by the Lynchburg College Press. The book sells for \$3.95 and is a revision of an earlier work by Dr. Freer, Professor Emeritus of Biology of Lynchburg College, a founder of the VSO and the VSO's first president.

This 100 page paperback checklist is  $4\frac{1}{2}'' \times 7\frac{1}{2}''$ . It contains about 30 excellent photographs by Dr. Frank T. Hanenkrat of the Lynchburg College English Department.

(Review courtesy Virginia Society of Ornithology Newsletter.)



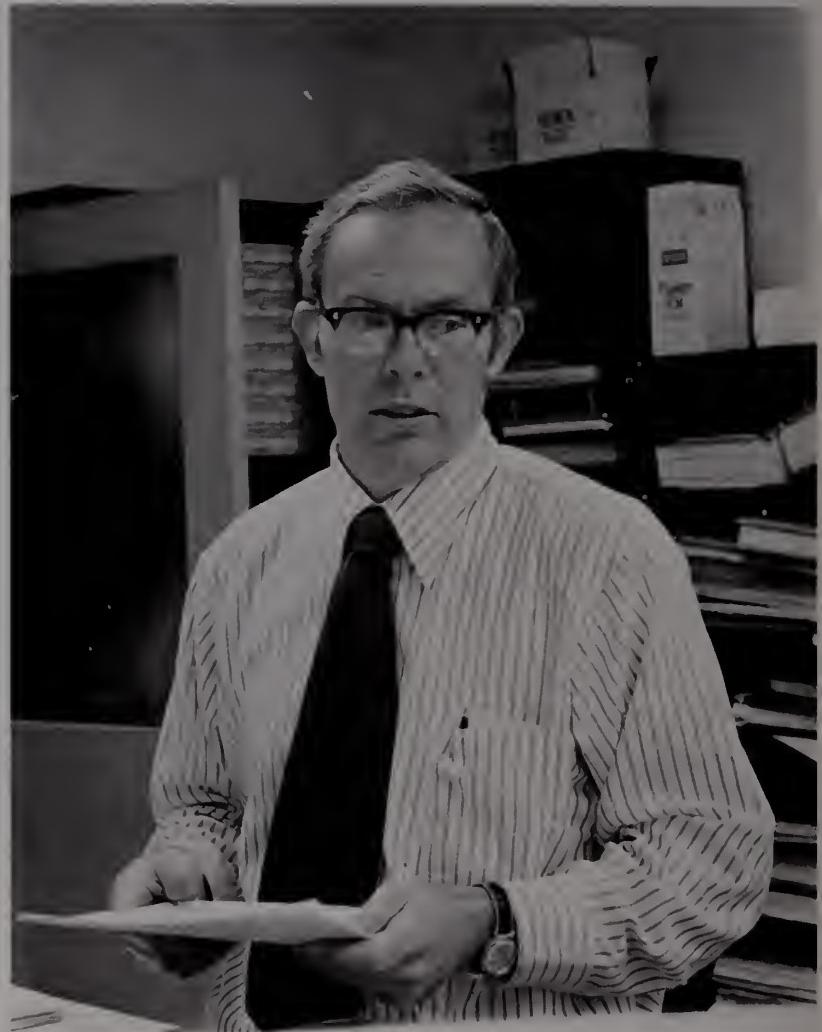
Tidewater Review photo by Jean Sturtz

The first NRA/Va. Game Commission Hunter Safety Course was taught in 1953 by Mr. Wilfred Courtney of West Point at West Point High School. A NRA riflery instructor since 1947, Mr. Courtney has instructed 54 schools and 547 pupils in marksmanship; 48 schools, 709 pupils, hunter safety; 8 schools, 404 pupils, home firearms safety. He also trains hunter safety instructors.

## *Know your BIOLOGISTS*

Text and Photo by F. N. SATTERLEE  
*Information Officer*

JACK V. GWYNN  
*Biologist Supervisor for Research,  
Game Division*



WHEN Jack Gwynn was growing up in Page County, Iowa, in the town of Shenandoah, little did he think that in later years he would be occasionally working in a county and city with the same names but in the state of Virginia.

Although his father was one of the early pioneers in radio broadcasting and served as engineer with radio station WHO in Des Moines, Jack was privileged to be able to grow up on his grandfather's 160-acre farm near Shenandoah, Iowa. There he learned to appreciate the outdoors and wildlife and hunting.

Following his father's death he and his mother moved to Lincoln, Nebraska. After graduating from Lincoln High School, he entered the University of Nebraska, concentrating on Civil Engineering. In 1946, he enlisted in the U.S. Navy and served for two years, mostly aboard the USS Tucson, a light cruiser. Following his discharge, he returned to the University of Nebraska, this time to major in journalism. However, during a required course in biology, he was im-

pressed with a guest speaker who was the Director of the Nebraska Fish and Game Department. So much so, in fact, that he changed his major to Biology.

In 1952 he was recalled to active duty in connection with the Korean Conflict. He served aboard the Destroyer USS Ingraham until 1953, when following his discharge he resumed his education, this time at the University of Michigan. It was at that institution that he received his BS in Biology and a MS in Wildlife Management.

Jack joined the Commission of Game and Inland Fisheries in 1956, working initially on a wild turkey project. Currently, Jack is Biologist Supervisor for Research in the Commission's Game Division. In this pursuit he feels rewarded in that, through research, the biologists are attempting to bring about more scientific ways to manage the renewable game resource.

Mrs. Gwynn is the former Ellen G. Comper of Pittsfield, Massachusetts. The Gwynns have four children and live in Charlottesville, Virginia.

# YOUTH AFIELD

Edited by ANN PILCHER

## Essayists Win Rifles

Congratulations to Virginia winners in the 1974 National Marlin Essay Contest. Writing on the subject "What the Hunter As an Individual Can Do to Preserve the Sport of Hunting," William F. Coleman of Dillwyn led other state entrants in the junior category (1st through 8th grades), and Robert Kidd, Jr., of Rockbridge Baths, was senior (9th-12th grade) winner. Prize for each category is a Marlin bolt action single shot .22 rifle. Also receiving .22 Magnum rifles were hunter safety course instructors of the two student winners: Frank Sweet, volunteer instructor from Pamplin, and Game Commission Warden Don Wirt of Lexington. Winning essay of 8th grader William Coleman follows.

From our nation's birth at Jamestown, Virginia, hunting has been the most steeped in American tradition of all other outdoor sports. Unfortunately, as a sport, hunting is often misunderstood. Many people, well intentioned but misinformed, have sought laws to ban hunting. They often claim that hunters are "out for blood" and are really exterminators at heart. Reliable facts prove otherwise. Few, if any, of the so-called "endangered species" have ever been hunted! They are almost always victims of pollution or man-made environmental practices which ruin one or more of the things that all living things must have; namely, food, water, and shelter.

Wildlife, like our forests, is a renewable resource although neither are unlimited.

There is a great deal an individual hunter can do to preserve this time-honored sport. A hunter should, like a Boy Scout, obey the Outdoor Code: "Be clean in outdoor manners, careful with fire, considerate and conservation-minded." A hunter should obey all Federal, State, and local game laws. A hunter should strive for a favorable public image. Although it is true that hunters' license fees have done more to preserve wildlife than any other group, much more can be done. Reporting game law violations would help. Spotlighting deer, hunting with an imitation muzzle-loader, using one of the modern compound-type bow and arrow, and such things should be discouraged. Another important thing an individual hunter can do is to always practice weapon safety. Many careless hunters kill others or themselves each year, which gives the sport a bad name.

Now, not every individual hunter can expect to walk in Daniel Boone's moccasins or win the Congressional Medal of Honor like Buffalo Bill. But there are vast frontiers out there waiting for the true sportsman who can and should preserve our nation's most rewarding sport. America, the beautiful, and blessed with the good things of the earth, will observe its 200th birthday soon. Let us, by wise use, all pitch in and preserve this noble American tradition so that we, and those who follow us, will enjoy this sport for years and years to come!

## Top Crop

Allen Ragsdale, Gretna Senior High Chapter FFA member, won the 16th annual Pittsylvania Future Farmers of America wildlife seed plot contest sponsored by the Izaak Walton League. Bill Rinkle, Pittsylvania IWL president, noted that the variety of food for quail,



Allen Ragsdale in award-winning wildlife seed plot.

turkey, dove, deer and rabbits has increased from the seeding of these plots. Mark Dodd and Willie Moss, of the Tunstall and Blairs Chapters, rated 2nd and 3rd in the county contest. Other participants were Franklin McGregor, Gretna Jr. High FFA; Norman Wells, Dan River FFA; and Donald Moore, Chatham FFA. Each of the youths, before being judged for the county award, was named winner in his respective school.

Seed plots were judged by Game Commission biologist Hal Myers and supervisor Harold Trumbo. They scored plots on survival and germination of seed, competition from weeds, variety of plants, seed production, location in reference to cover and water, and size of planting.

Courtesy Charles J. Franks, Director  
Vocational Educ., Pittsylvania Co. Schools

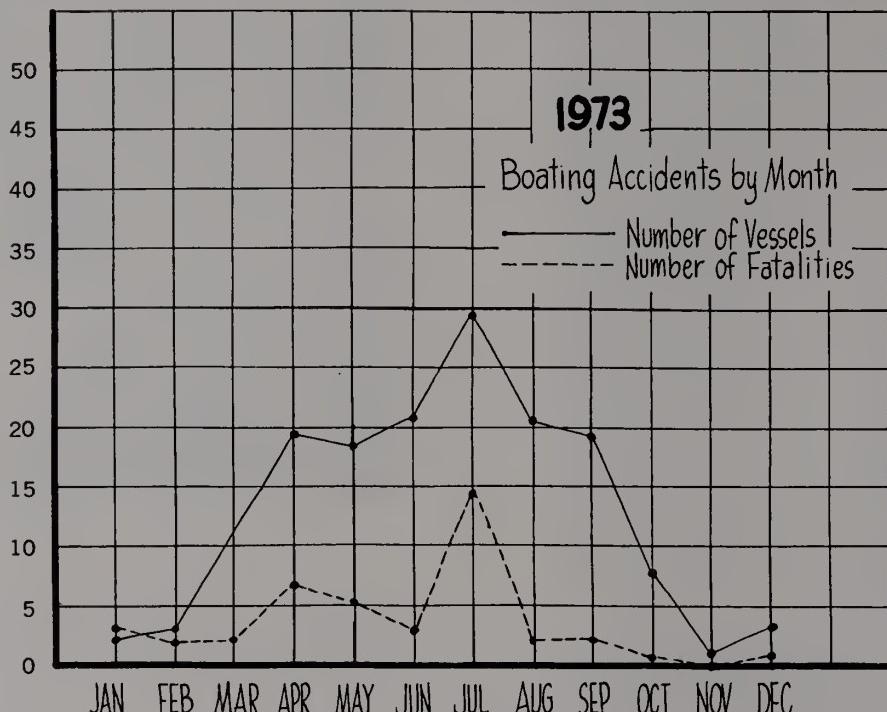
Loudoun County High School teachers and hunter safety instructors Garland Cooper, left, and Henry Wingate, who headed the course, are shown in front of bulletin board used as part of a hunting safety course completed 3/31/75 by 167 students. Veterans of Foreign Wars sponsored the project by purchasing needed study materials. Game Warden T. A. Daniel, Jr., assisted with the instruction given over a six-day period.



# ON THE WATERFRONT

Edited by JIM KERRICK

## Virginia Boating Accident Data



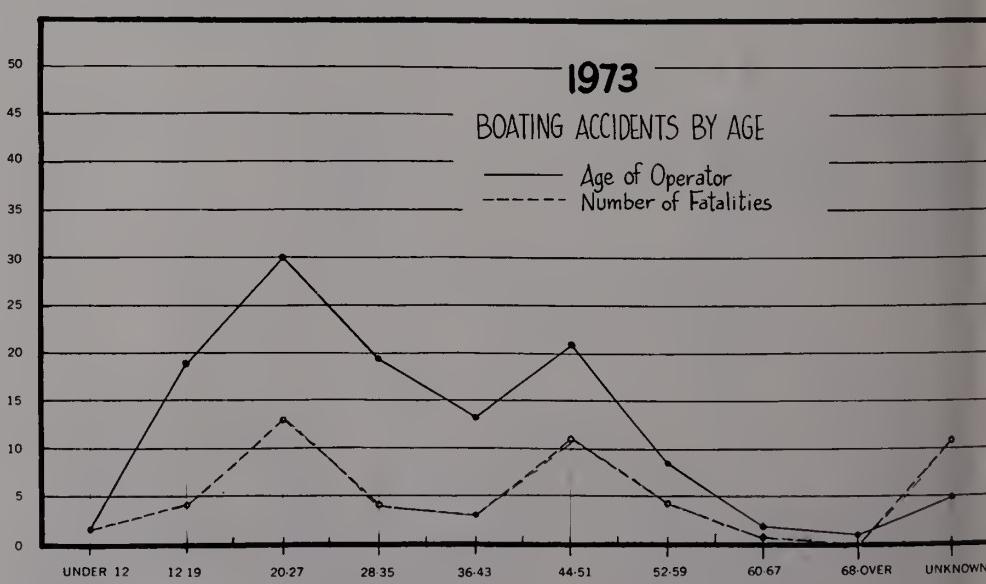
### USCG Issues Advisory on Terneplate Tanks

A "Special Boating Safety Consumer Protection Bulletin" was issued by the U. S. Coast Guard alerting owners of boats with self-contained terneplate fuel tanks to specific risks connected with the tanks.

On the basis that the tanks tend to corrode over a period of time, resulting in leakage of fuel into the boat, boat owners are advised to have their fuel tanks inspected at least once a year. Complete removal, if possible, is suggested prior to inspection. Otherwise, a thorough visual examination and a non-destructive pressure test conducted by competent personnel is recommended.

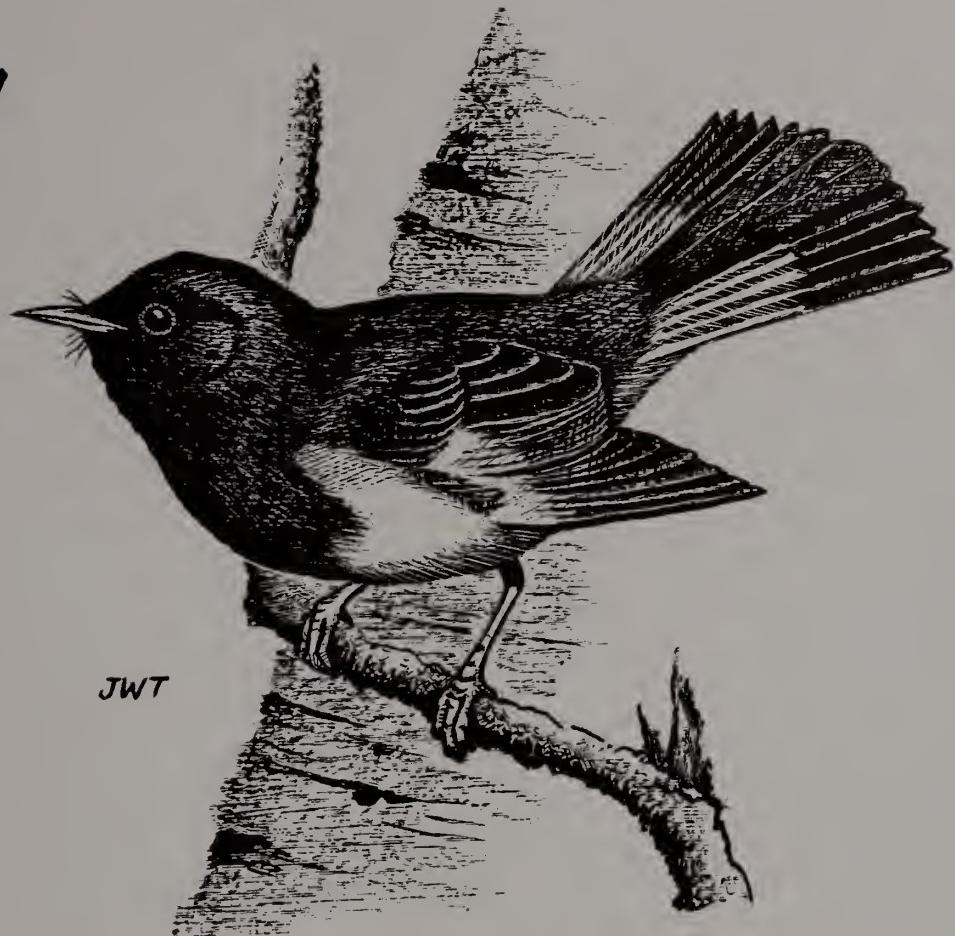
| Year | Registered Boats | Reported Accidents |
|------|------------------|--------------------|
| 1960 | 35,620           | 66                 |
| 1961 | 45,544           | 63                 |
| 1962 | 51,291           | 118                |
| 1963 | 41,677           | 90                 |
| 1964 | 49,429           | 67                 |
| 1965 | 56,773           | 82                 |
| 1966 | 54,364           | 65                 |
| 1967 | 58,602           | 70                 |
| 1968 | 66,941           | 58                 |
| 1969 | 70,005           | 61                 |
| 1970 | 73,782           | 86                 |
| 1971 | 77,000           | 92                 |
| 1972 | 85,609           | 91                 |
| 1973 | 110,000          | 121                |
| 1974 | 126,000          | 91                 |

| Year | Fatalities | Injuries | Property Damage |
|------|------------|----------|-----------------|
| 1960 | 15         | 18       | \$ 69,800       |
| 1961 | 29         | 20       | 170,000         |
| 1962 | 27         | 33       | 280,000         |
| 1963 | 38         | 20       | 184,000         |
| 1964 | 29         | 15       | 65,300          |
| 1965 | 55         | 12       | 34,400          |
| 1966 | 26         | 20       | 153,300         |
| 1967 | 34         | 20       | 106,100         |
| 1968 | 29         | 21       | 67,400          |
| 1969 | 31         | 11       | 136,900         |
| 1970 | 48         | 28       | 125,670         |
| 1971 | 30         | 36       | 161,807         |
| 1972 | 33         | 31       | 167,504         |
| 1973 | 43         | 33       | 329,866         |
| 1974 | 43         | 24       | 65,629          |



*Bird of the month:*

# THE AMERICAN REDSHIRT



By JOHN W. TAYLOR  
*Edgewater, Maryland*

LIKE many North American birds, the redstart was named by the early settlers after a bird they had known in Europe. And, as in nearly all of these instances, the American bird actually has little in common with its namesake. The English redstart is a small thrush with the sedate manner and ground-dwelling habits of that family; our bird is a wood warbler, a hyper-active sprite that flits amidst the leafy canopy of the forest.

Ornithologists like to call the warblers the butterflies of the bird world, and none is more butterfly-like than the redstart. With dainty grace, it pirouettes from limb to limb, darting, diving and twirling. Its habit of spreading its tail, while half opening its wings, completes the illusion.

Despite this charm, and its relative abundance, few people know the redstart. It is not a bird of our door-yards, or of open farm country; it makes its home amid the foliage of the forest canopy, where it is easily overlooked.

To learn its true abundance, go to its haunts, say in

the heavily forested Appalachian chain. There, one finds a pair of redstarts every two or three acres. The thin lisping song is heard constantly, and from all sides. (It is not until this song is learned that one realizes their numbers.)

The redstart winters in the West Indies and in South America. There it is known as "candilita" or "little torch," a descriptive name if ever there was one. Jet black, with flashes of fiery orange, the male redstart does seem almost ablaze. His mate, though less striking, is still a beauty, with her soft olive-greens and blue-grays, accented with patches of bright yellow. It takes several years for the young males to attain full plumage.

By early April they are back with us, arriving first in the Dismal Swamp region, then moving up the coastal plain. Not until the end of the month are they in evidence west of the Piedmont. They nest statewide, wherever there is suitable deciduous woodland, and are not at all selective. Any woods will do: bottomland flood plain or dry mountain ridge, second growth saplings or mature forest.

# "NATIONAL SAFE BOATING WEEK JUNE 29 to JULY 5"



KNUT